

of this hybrid is best delayed until *D. Clintoniana* shall have been more carefully studied. Credit for its recognition belongs to Dr. Philip Dowell.

In conclusion, I wish to thank Professor A. W. Evans, the Springfield Botanical Society, Miss Margaret Slosson, and Dr. Philip Dowell for favors received in connection with work on this paper.

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AMBER IN THE LARAMIE CRETACEOUS*

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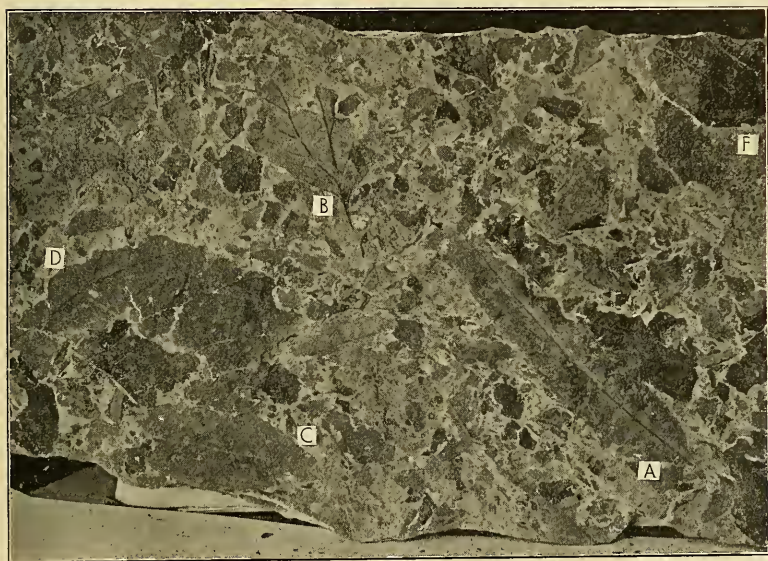
Recently, with the help of my wife and a number of students, I have been investigating the flora of the Laramie Cretaceous at Marshall, Boulder County, Colorado. This locality produces much of the coal used in Boulder, and has long been known to palaeobotanists, having furnished important materials to Lesquereux many years ago. Perhaps the most interesting thing found is a small piece of amber,† embedded in the solid rock. It measures about eight millimeters by five and a half, and is translucent orange-brown, darker than Baltic amber. It is practically insoluble in alcohol; a small fragment left in it over night was scarcely if at all diminished. In ether it eventually becomes opaque and friable. In TORREYA, January, 1907, Mr. E. W. Berry gave a very interesting account of the occurrence of amber in the Cretaceous beds of the Atlantic coast region; it now appears that this substance is widely distributed in our Upper Cretaceous, and it may be possible that somewhere it will be discovered in large quantities. The discovery of large pieces of Cretaceous amber would be an event of the highest importance, as there seems to be no reason why they should not contain plant remains and insects. Cretaceous insects are exceedingly desirable at the present time, to throw light on the evolution of

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† In using the term amber for the fossil resin of the Laramie strata, it is only intended to imply that it is a transparent fossil resin, with all the appearances of the substance known as amber. It is of course not the product of the same tree as the Baltic (typical) amber; indeed, judging from the accompanying foliage, it is very probably not even the product of a conifer.

existing groups ; while it is possible that flowers and fruits, could they be found as they are in Baltic amber, would bring about great changes in our conception of some of the Cretaceous genera.

The material containing the amber is a bluish-gray rock, full of plant remains, in the immediate vicinity of the coal. We did not find it in place, but were able to examine a large quantity thrown out on the dump of a coal mine a short distance east of Marshall. The principal plants in this rock were as follows:*



Slab containing fossil plants of Laramie age, Marshall, Colorado ; collected by Miss Ruth DeLong and Mr. Ralph Morrill. *A, C, Ficus navicularis* Ckll. (variable). *B, "Platanus" rhomboidea* Lx. *D, "Platanus" raynoldsii* Newby. *F, Dombeyopsis obtusa* Lx.? (Note the absence of coniferous remains in the specimen.)

1. *Ficus gaudini* Lx. (*uncata* Lx.). The large leaves are abundant ; possibly much of the fossil wood so common at Marshall may belong to this species, but we have made no sections.

2. *Phragmites laramianus* n. sp.; *P. oeningensis* Lx., Tertiary

*Since writing the above account, we have found quantities of amber in the coal at Marshall. Much of it was looked over for insects, but so far without success. None of the pieces is large. — April 26.

Flora, pl. viii, f. 1. This is the most abundant species in the deposit. The leaves are broad, and very obtuse at the apex, herein differing from *P. falcata* Kn. of the Yellowstone Laramie and the living *P. phragmites*. It does not seem possible to refer this to *P. oeningensis* A. Br. of the European Upper Miocene; it is no doubt much nearer to *P. alaskana* Heer, but Heer's plant, so far as positively known, had narrower leaves.

3. *Anemia supercretacea* Hollick. Previously known from the Laramie at Florence, Colorado. First found at Marshall by Paul Haworth. Our specimens run a little larger than Hollick's, but appear to be otherwise quite identical; the pinnules are entire. The plant may possibly be a variety of *Anemia haydenii* (*Gymnogramma haydenii* Lx., 1872), which appears to be distinctly different from *A. subcretacea* (Sap.) Gard. & Ett., as originally figured by Saporta. In the genuine *subcretacea* the pinnules are shorter than in *haydenii*, and more irregularly and remotely toothed. *A. perplexa* Hollick seems to me much more like *A. subcretacea*, differing only in the shorter and more broadly cuneate pinnules. Some of the material figured under *A. perplexa* has entire pinnules, and might just as well represent the Marshall plant.

No conifers were identified, though a very imperfect fragment in a piece of coarse sandstone may possibly belong to *Sequoia*.

Cinnamomum affine Lx. and *Juglans leconteana* Lx. were found associated at a different place, whether separated by any noteworthy interval of time I do not know. They appear to come from a higher level.

Sequoia longifolia Lx., which is such a characteristic fossil of the beds above the coal at Austin's Bluff, Colorado Springs, has been recorded from Marshall, but we did not find it, unless the dubious fragment just referred to belongs there.